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April 24, 2018

VIA ELECTRONIC FILING

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

**Re: GN Docket No. 17-183, *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*
Ex Parte Communication**

Dear Ms. Dortch:

We are writing to you express our opposition to the proposals contained in ex parte "*Frequency Sharing for Radio Local Area Networks in the 6 GHz Band (January 2018)*," prepared by RKF Engineering Services, LLC on behalf of Apple Inc., Broadcom Limited, Cisco Systems, Inc., Facebook Inc., Google LLC, Hewlett-Packard Enterprise, Intel Corporation, Microsoft Corporation, MediaTek Inc., and QUALCOMM Incorporated.

Apple et al. proposes to deploy large numbers of high-powered, uncontrolled unlicensed devices (RLANs) in the 6 GHz microwave bands. We oppose.

We agree wholeheartedly with the opposition comments made by AT&T and the FWCC (Fixed Wireless Communications Coalition). The 6GHz band is the work horse of the fixed link world in the United States. Its properties are unique in American terms; no other band can support such long links at such high availability. 7GHz and 8GHz are obviously reserved for federal use and 10GHz only supports up to 5MHz channels. The importance of the role of 6GHz, therefore, cannot be overestimated. Further, 6GHz provides critical communications to support both public safety and national infrastructure. AT&T's ex parte of March 16 points out that the band is home to almost 100,000 microwave links. At a relatively conservative estimate of \$125,000 per link for CapEx, \$12.5B is invested in the 6GHz band. The value of the work completed by these links on a daily basis over a matter of years is more difficult to estimate but likely goes well beyond the value of the hardware installed, especially given the public safety and utility deployments in this band.

The FWCC study filed on March 13, 2018, discredited the study by RKF Engineering by showing its claimed results do not follow from its assumptions, and showed in detail that the RLANs considered by RKF in fact would cause widespread interference. Average distribution of power, population of RLANs and height at which RLANs may be installed is unrealistically kind to any technical analysis of unlicensed services in a carefully coordinated and licensed band. It is our opinion that unlicensed/unregistered RLANs cannot coexist with licensed fixed links and we are greatly concerned that it would be virtually impossible for the FCC to locate any sources of interference in order to provide licensed fixed links with the protection they are entitled to.

This letter is endorsed by a large number of organizations, both state and private. The list of those who have endorsed this ex parte letter is included with this submission. Many organizations have grave concerns about use of RLANS at 6GHz. Here are some comments from those who have endorsed this submission:

"EcliptixNet Broadband, Inc., has invested a significant amount of the RUS Project Award of \$20.4 million in its microwave backbone to provide Internet access to unserved and under-served areas of northeastern Washington state. Essential portions of that network rely on 6 GHz microwave, particularly for long hauls for which the higher bands, i.e., 11 GHz-24 GHz are not suitable. Opening that spectrum to unlicensed use would be an unmitigated disaster to EBI and the customers it is serving."

Rodney. J. Bacon, President of EcliptixNet Broadband, Inc.

"Public safety, business and industrial users use this band to connect power production, water and other utilities, oil Production and to connect other important infrastructure over large transport distances. The ever-shrinking spectrum has put great demand on conservation of this valuable and irreplaceable resource. Sharing now is done with effective frequency coordination between users. Using this band for ad hoc networks is not in the Public Interest and necessity!!"

Bruce Marcus, CTO, Marcus Communications LLC

"The oil and gas industry depends on long hops with high bandwidth using lower 6gig Microwave. Using fiber and phone company access has become unreliable with an over-abundance of expenses. The cost associated with telco Circuit continues to increase, and the response to down time poor and unreliable. Oil & Gas has facilities within communities making the need greater for communications to work well."

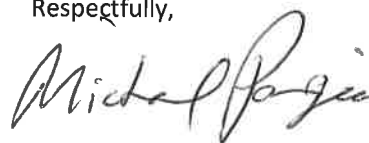
Lyle Roberts, RF Engineering and Design, Occidental Petroleum Corporation

"It is imperative to the safety and security of State, County and Local Government public safety agencies that this 6GHz spectrum remain highly regulated and interference-free from non-coordinated operations. Licensed 6GHz microwave systems are used to integrate land mobile radio tower sites and 911 dispatch centers into seamless interoperable public safety radio networks. In particular, the stability of point-to-point microwave linkages is essential for the proper operation of land mobile simulcast transmitter sites. These linkages cannot be replaced by wireline or fiber services as those are designed to commercial cost models and are far too unstable and unreliable for use within Today's public safety/law enforcement environment.

These 6GHz microwave systems are not constructed for convenience. They are each a key part to the success of life-critical radio communications. Relocation to other spectrum is costly and disruptive. Utilization of higher frequency spectrum is unrealistic due to rain-fade outages and their resultant disruptive effect to radio communication systems that can afford to absorb no such outages for the convenience of commercial interests. The FCC is urged to resist and abandon its ambition to relocate existing 6GHz operations as doing so would be contrary to the mission of police, fire and emergency medical services throughout the United States and is simply unacceptable."

Dominic Tusa, Founder, Tusa Consulting

Respectfully,



Michael Pangia
President & Chief Executive Officer

One or more individuals from the following organizations have signed this ex parte:

Motorola Solutions Inc.
United States Cellular
Chugach Electric Association Inc.
X-DOT, LLC
AT&T
RigNet
Shawano County Emergency Management
Wireless Applications Corp.
Wayne County, PA
Verizon
Basin Electric Power Cooperative
Oregon Dept of Transportation Wireless Communications Section
T-Mobile USA
Pinnacle Wireless
Occidental Petroleum Corp.
Atkins Wireless Consulting, LLC
Eugene Police Dept.
Chevron
Nebraska Rural Radio Assn.
Utility Telecom Consulting Group, Inc.
City of Missoula
ODOT
Charlotte County, FL
Wsdot.
Idaho Public Safety Communications
Siskiyou Telephone Company
Md transit administration
Sonoma County
County of Humboldt
EWEB
Director Weld County Public Safety Communications
Brazos Electric Power Cooperative
West Virginia Division of Homeland Security and Emergency Management
Syringa Networks
Verizon Wireless
GL Communications
E-Plane Microwave Services Ltd.
Tri-Rivers Broadcasting Company
National Rural Electric Cooperative Association (NRECA)
Transwave
County of Fresno
County of Napa
Deseret Power
Williamson County, Public Safety System
Arizona Department of Public Safety
State of Idaho Military Division, Public Safety Communications
Whitman County Emergency Management
Frisco Radio Ops

Mac Pass Radio, LLC
Astro Systems Corp.
Townsquare Media
City of Long Beach
Pierce County WA
County of Lake Illinois
Oncor Electric Delivery
Streakwave Wireless, Inc.
aspStation, Inc.
Comanche Electric Cooperative Association
King County WA.
Huffman Communications & Eng.
Northrop Grumman
KUSI-TV
County of San Luis Obispo
Orange County Transportation Authority
Lancaster County-Wide Communications
MHO
Prince William County Govt. Virginia
Uniti Fiber
King County
City & County of Honolulu
Tooele County Emergency Management
Swope Engineering, LLC.
Siskiyou County
University of Chicago
Bonneville Satellite Corp.
BSG WERKHAUS
Columbia County FL
City of Savannah, GA
Comtineo LLC
Puerto Rico Electric Power Authority
ProComm Telecommunications
RACOM Corporation
Washington county sheriffs office
Central Nebraska Public Power and Irrigation District
State of Nevada
Marcus Communications LLC
Gillespie, Prudhon & Associates, Inc.
CrossTalk
Mountain Radio Systems, Inc.
Amador Water Agency
Leland Electronics - P.S. Communications
Maryland Emergency Medical Services
State of Idaho
County of San Luis Obispo - Public Safety Communications
WillLine
Missoula County
EcliptixNet Broadband, Inc.
Dutchess County Department of Emergency Response

Expert Construction Managers, Inc.
Advanced Communications and Electronics, Inc.
St. Louis County Sheriff's Office - 911 Emergency Communications
Idaho Public Television
Montgomery County Radio Shop
Arizona Electric Power Cooperative
Colorado Springs Utilities
Nassau County Police Department
County of Sacramento DTECH
City of Phoenix
Niles Radio Communications
Sam Houston Electric Coop
Sprint
County of Monterey
City of Phoenix
Snohomish County PUD #1
City of Los Angeles
Washington State Patrol
Online Information Services, Inc
Arizona Department of Public Safety
ProComm Telecommunications Inc.
Shout Broadband, LLC
Wireless Advanced Communications
PROCOMM TELECOMMUNICATIONS, INC.
County of Napa Public Safety Communications
Washington State Dept of Transportation
National Tower and Telco
Idaho Military Division, Public Safety Communications
Believe Broadband
Canyon TV
City of Yuma
State of Maryland, MIEMSS
SyncWave, LLC
Yuma Regional Communications System
Grays Harbor County
Winncomm Technologies corp.
City of Eugene Public Works Maintenance
Grand Junction Police Department
Douglas County 911
State of WV
High Point Venture Group LLC
State of Hawaii
Tusa Consulting
Custer Telephone Cooperative Inc.
Bonneville International Corp
Connected Solutions LLC
Williams (Williams.com)
County of Wood, Wisconsin
Northern California Power Agency
City of Maple Valley, Police Dept.

East Hampton Town Police Department
Kentucky Emergency Warning System, Govt of Kentucky
Golden Gate Bridge, Highway & Transportation District
The Fusion Network
San Diego County Sheriff Wireless Services Division
Tri-State Generation and Transmission, Inc.
Maritime Electric
VASU COMMUNICATIONS INC.
Kanawha County Emergency Management
Dept of Homeland Security/CBP Air & Marine Operations
Altstatt Associates
Finish Tower, Inc.
State of Colorado
Utah Education Network
IXP Corporation
Keystone Microwave Services LLC
Waterleaf International LLC
Portland General Electric
North Central Texas Council of Governments
NCI Datacom, Inc.
Metro Los Angeles
Allgeier, Martin and Associates, Inc.
Grundy Electric Cooperative, Inc.
Nashville Public Radio
Pacific Communications
Mastec Network Solutions
WT Consulting Group, LLC (dba Cybertime Network Communications)
Noel Communications Inc.
KAIL-TV
POINT TO POINT TELECOM, LLC
Codcomm, Inc.
Communications Design Consulting Group. LLC
Langone & Associates
New Horizons Telecom Inc.
City of High Point
Enertech Resources, LLC